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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,590	02/27/2004	William Voorhees	03-0605	6833
24319	7590	05/16/2006	EXAMINER	
LSI LOGIC CORPORATION			ZAMAN, FAISAL M	
1621 BARBER LANE			ART UNIT	PAPER NUMBER
MS: D-106				
MILPITAS, CA 95035			2112	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/788,590	VOORHEES ET AL.	
	Examiner Faisal Zaman	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 14 April 2006.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-10, 15 and 16 is/are rejected.
 7) Claim(s) 11-14, 17 and 18 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 27 February 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 1-5 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yao et al. ("Yao") (U.S. Patent Application Publication No. 2003/0084219) in view of Bakke et al. ("Bakke") (U.S. Patent Application Publication No. 2005/0071532), and further in view of Badamo et al. ("Badamo") (U.S. Patent Application Publication No. 2002/0181476).

Regarding Claim 1, Yao discloses a multi-chip module (MCM) (Yao, Figure 1, item 10, Page 2, paragraph 29, "switch system") comprising:

A plurality of component circuits (Yao, Figure 1, item 15, Page 2, paragraph 29, "line cards") each having a number of internal ports internal to the MCM (Yao, Figure 2, item 35, Page 3, paragraph 32, "fabric interface port") and each having a number of external ports for coupling to devices external to the MCM (Yao, Figure 1, item 20, Page 2, paragraph 29); and

An internal fabric coupling together selected ones of the internal ports in selected ones of the plurality of component circuits (Yao, Figure 1, item 25, Pages 2-3, paragraphs 29 and 31-32, "switch fabric").

Yao does not expressly disclose wherein the component circuits are SAS expander component circuits, or that the devices which are coupled to the external ports are SAS devices and wherein the configuration of coupling together of the selected ones of the internal ports is static following initialization of the MCM.

In the same field of endeavor (e.g. data processing networks), Bakke discloses a plurality of serial attached SCSI ("SAS") expander component circuits (Bakke, Figure 4, items 0,1,102, Page 2, paragraph 18, "edge expanders") each having a number of internal ports (Bakke, Figure 4, item 120, Page 2, paragraph 20, "subtractive routing ports") and each having a number of external ports (Bakke, Figure 4, item 118, Page 2, paragraph 18, "direct routing ports") coupling to external SAS devices (Bakke, Figure 4, items 104,106,108,110,112,114, Page 2, paragraph 17).

Also in the same field of endeavor (e.g. network infrastructure devices that allow communications through a protocol), Badamo teaches a configuration of coupling together of a selected ones of internal ports is static (ie. using a static, yet programmable, switch fabric) following initialization of a system (Badamo, Figure 3, item 20, Page 4, paragraphs 0041 and 0043).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Bakke's teachings of data processing networks with the teachings of Yao, for the purpose of implementing resilient connectivity in a data processing network (see Bakke, Page 1, paragraph 11). Also, it would have been desirable as stated by Bakke for the data network system to prevent loss of data through increased fault tolerance (see Bakke, Page 1, paragraphs 2-3).

Yao also provides motivation to combine by stating it is an object of the invention to provide efficient connectivity between a variety of protocols in a switching system (see Yao, Page 1, paragraphs 4-5).

Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Badamo's teachings of network infrastructure devices that allow communications through a protocol with the teachings of Yao, for the purpose of efficiently handling received packets in a network device (see Badamo, Page 1, paragraph 0005). Also, it would be obvious to one of ordinary skill in the art to have a simpler configuration that provides low cost customized component circuits. Yao also provides motivation to combine by stating it is an object of the invention to provide efficient connectivity between a variety of protocols in a switching system (see Yao, Page 1, paragraphs 4-5).

Regarding Claim 2, Bakke discloses wherein the plurality of SAS expander component circuits comprises a number of SAS expander components each having a number of internal ports (Bakke, Figure 4, item 120, Page 2, paragraph 20, "subtractive routing ports").

Regarding Claim 3, Bakke discloses wherein the plurality of SAS expander component circuits comprises a number of SAS expander components each having a number of external ports (Bakke, Figure 4, item 118, Page 2, paragraph 18, "direct routing ports").

Regarding Claim 4, the examiner takes Official Notice that static fabric in the type of the system disclosed is a generally well-known type of internal fabric available in the prior art at the time of the applicant's claimed invention, therefore it would have been obvious to one of ordinary skill in the art to use static internal fabric.

Regarding Claim 5, the examiner takes Official Notice that a static fabric being configured at manufacture in the type of system disclosed is well-known in the prior art at the time of the applicant's claimed invention, therefore it would have been obvious to one of ordinary skill in the art to configure the static fabric at manufacture of the MCM.

Regarding Claim 10, Bakke teaches coordination logic communicatively coupled to the plurality of SAS expander component circuits to coordinate operation of the plurality of SAS expander component circuits (Bakke, Page 2, paragraph 22, receipt of data from one of the devices causes the edge expanders to use logic to determine where the data is to be sent, therefore it would be obvious to one of ordinary skill in the art that there is coordination logic within the edge expanders).

3. **Claims 6-9 and 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yao in view of Bakke and further in view of Badamo as applied to Claim 1 above ("Yao-Bakke-Badamo"), in further view of Barrow et al. ("Barrow") (U.S. Patent Publication No. 2002/0188786).

Yao-Bakke-Badamo discloses the invention substantially as claimed.

Yao-Bakke-Badamo discloses the module of Claim 1.

Regarding Claim 6, Yao-Bakke-Badamo does not expressly disclose wherein an internal fabric is initially configured at reset of the MCM.

In the same field of endeavor (e.g. a data storage system which consists of communications between the system and external data exchanging devices), Barrow teaches an internal fabric (Barrow, Figure 5, item 302, Page 5, paragraph 38) that is initially configured at reset (Barrow, Page 5, paragraph 44) of an MCM (Barrow, Figure 3, item 26, Page 3, paragraph 25).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined Barrow's teachings of a data storage system which consists of communications between the system and external data exchanging devices with the teachings of Yao-Bakke-Badamo, for the purpose of decreasing latency in moving data from external devices to the data storage system and vice versa (see Barrow, Page 1, paragraph 5). Yao-Bakke-Badamo provides motivation to combine by stating it is an object of the invention to provide efficient connectivity between a variety of protocols in a switching system (see Yao, Page 1, paragraphs 4-5).

Regarding Claim 7, Barrow teaches a control logic circuit (Barrow, Figure 5, item 308, Page 5, paragraphs 38 and 43) to configure the internal fabric at reset of the MCM (Barrow, Page 5, paragraph 44).

Regarding Claim 8, Barrow discloses wherein the internal fabric (Barrow, Figure 5, item 302, Page 5, paragraph 38) comprises a programmable fabric (Barrow, Page 5, paragraph 42).

Regarding Claim 9, Yao-Bakke-Badamo discloses a SAS device (Bakke, Figure 4, items 104,106,108,110,112,114, Page 2, paragraph 17) coupled to an external port (Bakke, Figure 4, item 118, Page 2, paragraph 18, "direct routing ports") of a SAS expander of an MCM (Bakke, Figure 4, items 0,1,102, Page 2, paragraph 18, "edge expanders").

Yao-Bakke-Badamo does not expressly disclose wherein a programmable fabric is adapted to be configured by information from a SAS device coupled to an external port of a SAS expander of the MCM.

In the same field of endeavor, Barrow teaches wherein a programmable fabric (Barrow, Figure 5, item 302, Page 5, paragraph 38) is adapted to be configured by information received from an external device (Barrow, Page 5, paragraph 42, the switch fabric 302 may be configured by I/O interfaces or control interfaces).

The motivation that was utilized in the combination of Claim 6, super, applies equally as well to Claim 9.

Claims 15-16 are directed to a method of the system of Claims 1-10. Yao, Bakke, Badamo, and Barrow teach, either alone or in combination as stated above, the system as set forth in Claims 1-10. Therefore, Yao, Bakke, Badamo, and Barrow also

teach, either alone or in combination as stated above, the method as set forth in Claims 15-16.

Allowable Subject Matter

4. **Claims 11-14 and 17-18** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 4/14/2006 regarding the limitation "multi-chip module" (see Page 11 of Applicant's Remarks/Arguments) have been fully considered but they are not persuasive. Applicant argues that Yao and Bakke do not teach a multi-chip module. On the contrary, this is in fact taught in Yao as switch system 10 of Figure 1 as there are multiple chips (Figure 1, item 15 and further Figure 2, items 30a-30n) disposed onto a module (Figure 1, item 10, which consists of external ports 20).

6. Applicant's arguments with respect to claims 1-5 and 10 regarding newly added limitation "wherein the configuration of coupling together of the selected ones of the internal ports is static following initialization of the MCM" have been considered but are moot in view of the new ground(s) of rejection.

Claim 15 is amended with similar limitations, see Applicant's Remarks/Arguments Page 12, and therefore is rejected for the same reasons as mentioned above with regards to Claims 1-5 and 10.

Therefore, the rejection to Claims 1-18 as being unpatentable under 35 USC 103 stands, to the extent it has been claimed.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

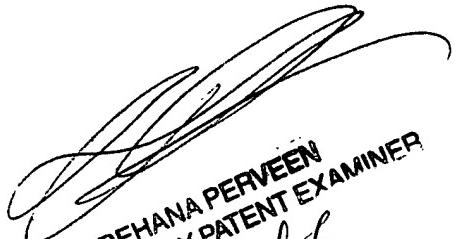
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faisal Zaman whose telephone number is 571-272-6495. The examiner can normally be reached on Monday thru Friday, 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2112

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

fmz



REHANA PERVEEN
SUPERVISORY PATENT EXAMINER
5/12/06

A handwritten signature in black ink, appearing to read "REHANA PERVEEN" followed by "SUPERVISORY PATENT EXAMINER". Below the name is a date, "5/12/06", written in a cursive style.